A Brain Drain due to Increased Regulation of Influenza Virus Research Is Highly Speculative

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A recent editorial (1) speculates that increased scrutiny of gain-of-function experiments and influenza research could "hobble the field." The authors worry that up-and-coming young scientists might eschew virology careers entirely and that established and highly skilled scientists might avoid undertaking important research because of the potential for controversy (1).

This concern echos the authors' earlier observations that "a small but significant number of investigators have chosen to discontinue working in the field due to the added regulatory burden" and "anecdotal evidence suggests this is occurring more than one would like" (2). The editorial is consistent with the NSABB's 2009 warning (3) that more stringent oversight "may not only drive scientists from important select agent research, but also drive select agent research out of academia and potentially out of the U.S. . . . ."

However, despite such warnings, microbiologists have offered virtually no evidence that biosecurity regulations are actually leading to such outcomes and no theory why they should. Although most people and organizations would prefer less regulation, it defies credibility that more governmental intrusion in pathogen research will make numerous microbiologists abandon work they love and for which they have trained for decades or that scientists' desire for independence will overwhelm their altruism and desire to advance human welfare. Furthermore, numerous mundane but universal personal considerations, such as long-term career prospects with current employers, family responsibilities, and location preferences, may make many scientists succumb grudgingly to marginal regulation rather than chuck it all.

As for potential new microbiologists, the degree of regulation is certainly one factor that they will consider in pursuing educational and career paths, but it may be much less significant than the dearth of permanent, financially secure research jobs and the ultracompetitive and enervating process of obtaining research funding.

Scholarly research about the physicists, chemists, and metallurgists at federal nuclear weapons labs in the 1940s and 1950s also strongly suggests that current concerns are greatly overblown. During that era, lengthy delays in processing security clearances and the labs' inability to publicly describe jobs in sufficient detail were far greater impediments to recruitment than working conditions were (4). Although many scientists had to endure physical isolation, high-level security clearances, compartmentalization, censorship of mail, and loyalty oaths, only a tiny percentage found the constraints so onerous that they left (5). This is not attributable simply to those scientists having had few other employment options. Interviews in the 1980s and 1990s with scientists doing classified research at the Lawrence Livermore Laboratory revealed that many strongly preferred that organization's highly restricted environment to a university or commercial laboratory (6, 7). A Defense Science Board panel (8) recently noted that scientists at the National Nuclear Security Administration and the National Security Agency "widely accept" their employers' "extremely intrusive monitoring of mental and emotional health."

The authors should include this issue in the editorial's priority research agenda, but to elevate it to a potentially existential threat is totally unjustified.

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